

Application No. 10/812,294
Amendment dated October 30, 2006
Reply to Office Action of June 30, 2006

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AMENDMENTS TO THE CLAIMS

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Claim 1 (Currently amended): An apparatus, comprising:

an optical transport for receiving an electromagnetic wave having a first property, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and a transport influencer, operatively coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for variably affecting a second property of said transport, wherein said second property influences said first property of said wave.

Claim 2 (Original): The apparatus of claim 1 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 3 (Original): The apparatus of claim 1 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 4 (Original): The apparatus of claim 2 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 5 (Original): The apparatus of claim 2 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

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Claim 6 (Original): The apparatus of claim 1 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 7 (Original): The apparatus of claim 6 wherein said magnetic material includes permanent magnetic material.

Claim 8 (Original): The apparatus of claim 6 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 9 (Original): The apparatus of claim 6 wherein said magnetic material is integrated into said fiber waveguide.

Claim 10 (Previously presented): An apparatus, comprising:
an optical transport for receiving an electromagnetic wave having one of a right hand circular polarization or a left hand circular polarization, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and
a transport influencer, operatively coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for controllably affecting a magnetic field of said transport to change a polarization angle of said wave.

Claim 11 (Original): The apparatus of claim 10 wherein said influencer changes a polarization angle over a range of about zero degrees to about ninety degrees.

Claim 12 (Original): The apparatus of claim 10 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization angle.

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Claim 13 (Original): The apparatus of claim 11 wherein said influencer is responsive to a control signal for changing said polarization angle.

Claim 14 (Original): The apparatus of claim 12 wherein said influencer is responsive to a control signal for changing said polarization angle.

Claim 15 (Original): The apparatus of claim 11 wherein said influencer alters said polarization angle over a range from about zero degrees to about ninety degrees.

Claim 16 (Original): The apparatus of claim 12 wherein said influencer alters said polarization angle over a range from about zero degrees to about ninety degrees.

Claim 17 (Previously presented): The apparatus of claim 10 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 18 (Original): The apparatus of claim 6 wherein said magnetic material includes permanent magnetic material.

Claim 19 (Original): The apparatus of claim 6 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 20 (Original): The apparatus of claim 6 wherein said magnetic material is integrated into said fiber waveguide.

Claim 21 (Canceled): ~~A method comprising:~~
~~receiving an electromagnetic wave having a first property at an optical~~
~~transport, said transport having a waveguiding region and one or more~~

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~~guiding regions coupled to said waveguiding region; and
affecting a second property of said transport using a transport
influencer coupled to said optical transport and having at least a
portion integrated with one or more guiding regions of said one or
more guiding regions, wherein said second property influences said
first property of said wave.~~

~~Claim 22 (Canceled): The method of claim 21 wherein said first property is a
polarization plane and said second property is a magnetic field in said
transport.~~

~~Claim 23 (Canceled): The method of claim 21 wherein said influencer
produces a controllable magnetic field parallel to a propagation
direction of said wave through said transport.~~

~~Claim 24 (Canceled): The method of claim 22 wherein said influencer
produces a controllable magnetic field parallel to a propagation
direction of said wave through said transport to alter said polarization
plane of said wave.~~

~~Claim 25 (Canceled): The method of claim 22 wherein said influencer alters
said polarization plane by changing a rotation angle of at least one
component of said polarization plane in a range from about zero
degrees to about ninety degrees.~~

~~Claim 26 (Canceled): The method of claim 21 wherein said transport is a
fiber waveguide including a core and a cladding corresponding to one
or more guiding regions of said one or more guiding regions and
wherein said influencer includes a magnetic material integrated with
said cladding.~~

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Claim 27 (Canceled): ~~The method of claim 26 wherein said magnetic material includes permanent magnetic material.~~

Claim 28 (Canceled): ~~The method of claim 26 wherein said magnetic material is selectively magnetized responsive to an electric current.~~

Claim 29 (Canceled): ~~The method of claim 26 wherein said magnetic material is integrated into said fiber waveguide.~~

Claim 30 (Previously presented): An apparatus, comprising:
means for receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and means, operatively coupled to said receiving means and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for affecting a second property of said transport using a transport influencer coupled to said optical transport, wherein said second property influences said first property of said wave.

Claim 31 (Original): The apparatus of claim 30 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 32 (Original): The apparatus of claim 30 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.

Claim 33 (Original): The apparatus of claim 31 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

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Claim 34 (Original): The apparatus of claim 31 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.

Claim 35 (Previously presented): The apparatus of claim 30 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding and wherein said influencer includes a magnetic material integrated with said cladding.

Claim 36 (Original): The apparatus of claim 35 wherein said magnetic material includes permanent magnetic material.

Claim 37 (Original): The apparatus of claim 35 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 38 (Original): The apparatus of claim 35 wherein said magnetic material is integrated into said fiber waveguide.

Claim 39 (Previously presented): An apparatus, comprising:
a fiber waveguide for receiving an electromagnetic wave having a particular polarization, said waveguide having a core and one or more guiding regions disposed around said core; and
a variable magnetic field generating structure, a portion of which is integrated with and operatively to one or more of said guiding regions, for producing a controllable variable magnetic field in said core responsive to a control signal, said controllable variable magnetic field variably changing said particular polarization responsive to said control signal.

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~~Claim 40 (Canceled): A computer program product comprising a computer readable medium carrying program instructions for operating an apparatus when executed using a computing system, the executed program instructions executing a method, the method comprising: receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and affecting a second property of said transport using a transport influencer coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, wherein said second property influences said first property of said wave.~~

~~Claim 41 (Canceled): The computer program product of claim 40 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.~~

~~Claim 42 (Canceled): The computer program product of claim 40 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.~~

~~Claim 43 (Canceled): The computer program product of claim 41 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.~~

~~Claim 44 (Canceled): The computer program product of claim 41 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.~~

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Claim 45 (Canceled): ~~The computer program product of claim 40 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.~~

Claim 46 (Canceled): ~~The computer program product of claim 45 wherein said magnetic material includes permanent magnetic material.~~

Claim 47 (Canceled): ~~The computer program product of claim 45 wherein said magnetic material is selectively magnetized responsive to an electric current.~~

Claim 48 (Canceled): ~~The computer program product of claim 45 wherein said magnetic material is integrated into said fiber waveguide.~~

Claim 49 (Canceled): ~~A propagated signal on which is carried computer-executable instructions which when executed by a computing system performs a method, the method comprising:
receiving an electromagnetic wave having a first property at an optical transport, said transport having a waveguiding region and one or more guiding regions coupled to said waveguiding region; and
affecting a second property of said transport using a transport influencer coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, wherein said second property influences said first property of said wave.~~

Claim 50 (Canceled): ~~The signal of claim 49 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.~~

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Claim 51 (Canceled): ~~The signal of claim 49 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport.~~

Claim 52 (Canceled): ~~The signal of claim 50 wherein said influencer produces a controllable magnetic field parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.~~

Claim 53 (Canceled): ~~The signal of claim 50 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane in a range from about zero degrees to about ninety degrees.~~

Claim 54 (Canceled): ~~The signal of claim 49 wherein said transport is a fiber waveguide including a core and a cladding corresponding to one or more guiding regions of said one or more guiding regions and wherein said influencer includes a magnetic material integrated with said cladding.~~

Claim 55 (Canceled): ~~The signal of claim 54 wherein said magnetic material includes permanent magnetic material.~~

Claim 56 (Canceled): ~~The signal of claim 54 wherein said magnetic material is selectively magnetized responsive to an electric current.~~

Claim 57 (Canceled): ~~The signal of claim 54 wherein said magnetic material is integrated into said fiber waveguide.~~

Claim 58 (New): An apparatus comprising:
an optical transport for receiving an electromagnetic wave having a
first property, said transport having a waveguiding channel and one or

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more guiding regions coupled to said waveguiding channel for inhibiting a radiation signal of said wave propagating in said waveguiding channel from exiting said waveguiding channel; and a transport influencer, operatively coupled to said optical transport and having at least a portion integrated with one or more guiding regions of said one or more guiding regions, for variably affecting a second property of said transport, wherein said second property influences said first property of said wave.

Claim 59 (New): The apparatus of claim 58 wherein said first property is a polarization plane and said second property is a magnetic field in said transport.

Claim 60 (New): The apparatus of claim 58 wherein said influencer produces a variably controllable magnetic field, responsive to a control signal, parallel to a propagation direction of said wave through said transport.

Claim 61 (New): The apparatus of claim 59 wherein said influencer produces a variably controllable magnetic field, responsive to a control signal, parallel to a propagation direction of said wave through said transport to alter said polarization plane of said wave.

Claim 62 (New): The apparatus of claim 59 wherein said influencer alters said polarization plane by changing a rotation angle of at least one component of said polarization plane over a range from about zero degrees to about ninety degrees.

Claim 63 (New): The apparatus of claim 58 wherein said transport includes a fiber waveguide, said waveguiding channel including a core and said one or more guiding regions including one or more cladding layers for

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said core and wherein said influencer includes a magnetic material integrated with said cladding during manufacture of said transport.

Claim 64 (New): The apparatus of claim 63 wherein said magnetic material includes permanent magnetic material.

Claim 65 (New): The apparatus of claim 63 wherein said magnetic material is selectively magnetized responsive to an electric current.

Claim 66 (New): The apparatus of claim 63 wherein said magnetic material is integrated into said fiber waveguide during fiber manufacturing.

Claim 67 (New): The apparatus of claim 58 wherein said radiation signal is in the visible spectrum.

Claim 68 (New): The apparatus of claim 58 wherein said waveguiding channel includes Verdet constant increasing elements.

Claim 69 (New): The apparatus of claim 58 wherein said transport includes a bulk device.

Claim 70 (New): The apparatus of claim 58 wherein said one or more guiding regions includes a first guiding region provided with a modifying material to modify a transport property of said waveguiding channel without influencing said second property.

Claim 71 (New): The apparatus of claim 59 wherein said one or more guiding regions includes a first guiding region provided with a magnetic material to modify a magnetic property of said waveguiding channel without modifying a component of said magnetic field in said transport that is parallel to a propagation axis through said waveguiding channel.

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Claim 72 (New): The apparatus of claim 58 wherein said one or more guiding regions includes a second guiding region provided with a modifying material to modify said second property.

Claim 73 (New): The apparatus of claim 59 wherein said one or more guiding regions includes a second guiding region provided with a second magnetic material to modify a component of said magnetic field in said transport that is parallel to a propagation axis through said waveguiding channel.

Claim 74 (New): The apparatus of claim 58 wherein said one or more guiding regions includes a first guiding region provided with a first modifying material to modify a transport property of said waveguiding channel without influencing said second property and wherein said one or more guiding regions includes a second guiding region provided with a second modifying material to modify said second property.

Claim 75 (New): The apparatus of claim 59 wherein said one or more guiding regions includes a first guiding region provided with a first magnetic material to modify a magnetic property of said waveguiding channel without modifying a component of said magnetic field in said transport that is parallel to a propagation axis through said waveguiding channel and wherein said one or more guiding regions includes a second guiding region provided with a second magnetic material to modify a component of said magnetic field in said transport that is parallel to a propagation axis through said waveguiding channel.

Claim 76 (New): The apparatus of claim 75 wherein said radiation signal includes a component in a spectrum visible to the unaided human eye.

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